

REMARKS

Claims 23, 26 and 36 have been canceled. Claims 19-22, 24, 25, 27-35 and 37-39 are active in the present application. Reconsideration is respectfully requested.

The present invention is related to a laminated glass glazing that is transparent and has infrared light reflecting characteristics.

Claim Amendments

Claim 19 has been amended by incorporating part of the subject matter pertaining to the antisen layer of Claim 23 therein. An amendment to the claim also clarifies that the metallic layer of the antisen coating is a coat system of a metallic layer positioned between two dielectric layers or stacks of dielectric layers between which are positioned two or more non-contacting metallic layers as disclosed on page 4 of the specification. The amendments do not introduce new matter into the case.

Claim 22 has been amended so that it is consistent to the amendments made to Claim 19.

Claim 24 has been amended in order to indicate that the intercalating sheet is positioned between the exterior glass pane and the interior glass pane of the laminate. Entry of the amendments is respectfully requested.

Invention

The present invention is directed to a transparent laminated glazing that is formed of (i) an exterior glass pane having a first face intended to face the exterior of a vehicle or a room and a second face intended to face the interior of a vehicle or a room, (ii) an interior glass pane having a third face intended to face the exterior of the vehicle or room and a fourth face intended to face the interior of the vehicle or room, (iii) an antisen coating that reflects

solar rays with wavelengths greater than 780 nm that comprises a stack of layers, this stack of layers comprising at least a metallic layer positioned between two dielectric layers or between two dielectric coat systems each comprising at least two dielectric layers, wherein each of the dielectric layers is a metal oxide or a metal nitride, the antisun coating being applied to the second face of the exterior glass pane, and (iv) a low-emissive transparent coating that reflects heat rays with wavelengths greater than 1100 nm. The exterior glass pane is closer to the exterior of the vehicle or room, the interior glass pane is closer to the interior of the vehicle or room, the exterior glass pane and the interior glass pane are united by a thermoplastic intercalating sheet that contacts the second face of the exterior glass pane and the third face of the interior glass pane, and the antisun coating is closer to the exterior of the vehicle or room than the low-emissive transparent coating.

Prior Art Rejection

Claims 19, 20, 24-27, 29, 32, 33 and 36-38 stand rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236. This ground of rejection is respectfully traversed.

As stated previously, the Frost et al patent discloses a laminated glass structure that is comprised of two glass sheets between which is positioned an infrared-reflecting layer which, as described at column 2, lines 55-59, is a laminate of at least one silver layer embedded between metallic and/or dielectric layers. There is no other infrared reflecting layer within the structure of the laminate. The Ag based infrared reflecting layer of the laminate has the same structure of the antisun layer structure of the laminated glazing of the present invention. On the other hand, there is absolutely no teaching of the presence of some other infrared reflecting layer in the laminate disclosed, and certainly not the low emissivity infrared reflecting layer of the presently claimed laminate.

The Colmon et al patent discloses a pane that is coated with a metal oxide coating. The pane is indicated as useful as a window pane for use in automobiles. The metal oxide coating that is disclosed is what is known as a low emissivity coating, an example of which is SnO_2 that is doped with fluorine. Two configurations of the pane are shown in Figs 1 and 2 of the patent. Such an oxide coating is said in column 1 to be capable of reflecting infrared radiation and in column 2, lines 36-40 is said to have beneficial effects on the energy exchange between the exterior and interior of a vehicle. Thus, in the winter, loss of heat from the passenger compartment of the vehicle is reduced (heat is reflected back into the passenger compartment) while in summer heat energy (IR radiation) from the exterior of the vehicle is reflected back into the atmosphere thereby reducing heat penetration into the passenger compartment of a vehicle. Accordingly, the low emissivity coating of the reference functions as both an antisun layer and a low emissivity coating. It is important to note that each reference teaches a window pane product or glazing that is complete in and of itself using only one type of coating or layer material that functions in the intended manner of reflecting IR light or in the manner of a low emissivity coating. There is therefore no suggestion whatever in the references of combining both an IR light reflecting layer and a low emissivity coating in the manufacture of a single transparent glazing. The references do not teach any advantage to be gained by combining the effects of two different types of light/heat reflecting layers in a single transparency. Accordingly, the obviousness ground of rejection is obviated and withdrawal of the rejection is respectfully requested.

Claims 21, 23 and 34 stand rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236, further in view of Shibata et al, U. S. Patent 5,132,161. This ground of rejection is respectfully traversed.

It is noted that Claim 23 has been canceled and that a portion of the subject matter has been incorporated into Claim 19. As to Claims 21 and 34, the same are not directed to subject

matter that is essential for patentability. Moreover, they depend upon Claim 19 which is believed to be patentable over the primary patent to Frost et al and Colmon et al, and as such, therefore, incorporate patentable subject matter therein. On the other hand, Shibata et al does not contain any teachings that makes the combined teachings of the prior art more relevant to the present invention. Accordingly, the obviousness ground of rejection is obviated and withdrawal of the rejection is respectfully requested.

Claim 22 stands rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236, further in view of Guiselin et al, U. S. Patent 6,042,934. This ground of rejection is respectfully traversed.

The Guiselin et al reference is of secondary interest, because it does not add anything that brings the primary Frost et al and Colomon et al patents closer to the present invention, and especially the embodiment of Claim 22 which upon which patentability does not depend. Accordingly, the obviousness ground of rejection is obviated and withdrawal of the rejection is respectfully requested.

Claim 28 stands rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236, further in view of Anderson et al, U. S. Patent 5,602,457. This ground of rejection is respectfully traversed.

The subject matter of Claim 28 is an aspect of the invention on which patentability does not depend. Moreover, even though the Anderson et al patent discloses a tinted PVB layer, this is not subject material that brings the prior art closer to the distinguishing subject matter which distinguishes the invention as claimed from the primary references. Accordingly, the obviousness ground of rejection is believed obviated and withdrawal of the rejection is respectfully requested.

Claim 30 stands rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236, further in view of Van

Laethem et al, U. S. Patent 3,801,423 and in view of Rieser et al et al, U. S. Patent 4,107,366.

This ground of rejection is respectfully traversed.

The subject matter of Claim 30, which is directed to a glass pane that is either toughened or rendered convex, is an aspect of the invention on which patentability does not depend. Further, the cited secondary prior art does not overcome the differences between the present invention as claimed in Claim 19, which subject matter is incorporated into Claim 30, and the cited primary references. Accordingly, the obviousness ground of rejection is believed obviated and withdrawal of the rejection is respectfully requested.

Claims 31 and 35 stand rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236, further in view of Iida et al, U. S. Patent 5,073,451. This ground of rejection is respectfully traversed.

The subject matter of Claims 31 and 35 is subject matter that is of secondary interest in the invention and is not determinative of patentability. Further, the cited secondary prior art does not overcome the differences between the present invention as claimed in Claims 30 and 35 which incorporate the distinctive features of generic Claim 19 therein. Accordingly, the obviousness ground of rejection is believed overcome and withdrawal of the rejection is respectfully requested.

Claim 39 stands rejected based on 35 USC 103(a) as obvious over Frost et al, U. S. Patent 5,932,329 in view of Colmon et al, U. S. Patent 4,584,236, further in view of Miyazaki et al, U. S. Patent RE 37,446. This ground of rejection is respectfully traversed.

The Miyazaki et al patent discloses a low emissivity film. However, applicants are not the first to discover and use such a film. Rather, as explained above, the distinction of the present invention is the precise positioning of an antisun layer between two glass panes and the co-employment of a low emissivity layer also positioned between the two glass panes. On the other hand, Miyazaki et al contains no comparable disclosure of such matter and therefore

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is not germane to the invention as claimed in Claim 39 which incorporates the subject matter of Claim 19 therein. The obviousness ground of rejection is believed overcome and withdrawal of the rejection is respectfully requested.

The Anderson et al, Guiselin et al, Shibata et al, Ida et al, Van Laethem et al and Miyazaki et al are all of secondary interest and contain no disclosure that brings the primary Frost et al and McKown et al patents closer to the present invention. In fact, the secondary references have been cited as pertinent to secondary, i.e., dependent, aspects of the invention upon which patentability does not depend. Accordingly, withdrawal of the remaining grounds of rejection is respectfully requested.

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited...

Respectfully submitted,

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